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10/733,259

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Chi-Chang Chang

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05/08/2006

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WASHINGTON, DC 20005

EXAMINER

CHANG, YEAN HSI

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/733,259

Applicant(s)

CHANG, CHI-CHANG

Examiner

Yean-Hsi Chang

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 4/13/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Pat. No. 6,947,036 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Shabbir et al. (US 6,400,565 B1).

Shabbir teaches an electronic device (10, fig. 1) comprising: a liquid crystal display (16), a motherboard (20) including a heat dissipation module (34), a converter board (28), connected to the heat dissipation module (fig. 2) and coupled to the

Art Unit: 2835

motherboard and the liquid crystal display (see figs. 2, 3 and 5), a fixing member (40) connecting the converter board and the heat dissipation module so that the converter board is fixed on the heat dissipation module (see fig. 3), and a cushion member (44) disposed between the converter board and the heat dissipation module (see col. 5, lines 41-53) (claim 1); and a first connector (32 of 26) disposed on the motherboard, and a second connector (30), corresponding to the first connector, disposed on the converter board (claim 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boesch et al. (US 6,570,561 B1) in view of Wobig et al. (US 6,711,013 B2) and McMahan et al. (US 6,359,780 B1).

Boesch teaches an electronic device (10, fig. 1) comprising: a liquid crystal display module (20), a motherboard (24) including a heat dissipation module (36), a converter board (34), connected to the heat dissipation module (fig. 3) and coupled to the motherboard and the liquid crystal display (shown in fig. 4) for converting a first signal from the motherboard to a second signal suitable for use by the liquid crystal

Art Unit: 2835

display module (shown in fig. 2) (claims 1 and 20); and a first connector (50) disposed on the motherboard, and a second connector (obvious feature not shown), corresponding to the first connector, disposed on the converter board (claim 2); wherein the connectors and the converter board are LVDS type (see col. 3, lines 46-52, since converter 34 is a LVDS board) (claims 3-4); a third connector (not shown) disposed on the liquid crystal display, and a fourth connector (52) corresponding to the third connector, disposed on the converter board, wherein the second signal is transmitted to the liquid crystal display by the third connector connecting to the fourth connector (obvious feature) (claim 7); and a cable (54) connecting the third connector and the liquid crystal display (see figs. 2 and 4) (claim 12).

Regarding claim 1, Boesch further teaches that the converter board is fixed on the heat dissipation module (see fig. 3, and col. 3, lines 53-55). Boesch fails to show a fixing member connecting the converter board and the heat dissipation module and a cushion member disposed between the converter board and the heat dissipation module. Wobig teaches a fixing member (36, fig. 3) for fixing a bracket to a heat dissipation module (28); and McMahan teaches a cushion member (26, fig. 3) between a heat dissipation module (24) and a board (20) for providing good contact between the heat dissipation module and the board. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a fixing member (36, fig. 3) taught by Wobig for fixing the converter board to the heat dissipation module and a cushion member taught by McMahan, disposed between the converter board and the

Art Unit: 2835

heat dissipation module for providing good contact between the heat dissipation module and the board.

Regarding claims 14-15, Wobig further teaches the fixing member being a screw and obviously the converter board may have to have a through hole and the heat dissipation module may have to have a screw hole.

Regarding claims 16-19, McMahan further teaches the cushion member being a pad made of plastic material. But McMahan fails to teach the cushion member being made of a heat-isolation material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a cushion member being made of a heat-isolation material for preventing heat from transferring to the converter board, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

Regarding claims 5-6, 10-11 and 13, Boesch fails to teach the connectors and the converter board being TMDS type and the motherboard being mini-ITX type. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the converter being made with TMDS type connectors and circuit board, and mini-type motherboard for the device of Boesch, since the TMDS type connectors and circuit board, and mini-type motherboard are well known and off-the-shelf available, for the purposes of lower EMI and space saving.

Art Unit: 2835

6. Claims 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boesch et al. (US 6,570,561 B1) in view of Wobig et al. (US 6,711,013 B2), McMahan et al. (US 6,359,780 B1) and Hsu (CN 443548).

Boesch teaches a conversion module (fig. 4) for a liquid crystal display (20) and a motherboard (24) including a heat dissipation module (36), comprising: a converter and board (34), connected to the heat dissipation module (shown in fig. 3), converting a first signal from the motherboard to a second signal suitable for use by the liquid crystal display (see figs. 2 and 4), a first connector (50) disposed on the converter board and coupled to the motherboard (fig. 4), and a second connector (52) disposed on the converter board and coupled to the liquid crystal display, wherein the first signal is transmitted to the converter board and the second signal is transmitted to the liquid crystal display by the first connector and the second connector (see fig. 2) (claim 21); and a cable (54) connecting the liquid crystal display and the second connector (claim 27).

Regarding claim 21, Boesch further teaches that the converter board is fixed on the heat dissipation module (see fig. 3, and col. 3, lines 53-55). Boesch fails to show a fixing member connecting the converter board and the heat dissipation module and a cushion member disposed between the converter board and the heat dissipation module. Wobig teaches a fixing member (36, fig. 3) for fixing a bracket to a heat dissipation module (28); and McMahan teaches a cushion member (26, fig. 3) between a heat dissipation module (24) and a board (20) for providing good contact between the heat dissipation module and the board. It would have been obvious to one having

Art Unit: 2835

ordinary skill in the art at the time the invention was made to select a fixing member (36, fig. 3) taught by Wobig for fixing the converter board to the heat dissipation module and a cushion member taught by McMahan, disposed between the converter board and the heat dissipation module for providing good contact between the heat dissipation module and the board.

Regarding claims 28-29, Wobig further teaches the fixing member being a screw and obviously the converter board may have to have a through hole and the heat dissipation module may have to have a screw hole.

Regarding claims 30-33, McMahan further teaches the cushion member being a pad made of plastic material. But McMahan fails to teach the cushion member being made of a heat-isolation material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a cushion member being made of a heat-isolation material for preventing heat from transferring to the converter board, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

Regarding claims 23-26, Boesch fails to teach the connectors and the converter board being TMDS type and the motherboard being mini-ITX type. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the converter being made with TMDS type connectors and circuit board, and mini-type motherboard for the device of Boesch, since the TMDS type connectors and

Art Unit: 2835

circuit board, and mini-type motherboard are well known and off-the-shelf available, for the purposes of lower EMI and space saving.

Regarding claim 22, Boesch fails to teach the first connector and the second connector are located at opposite sides of the converter board.

Hsu teaches converter board (24, fig. 1) for an LCD display (30), comprising: a first connector (240) disposed on the converter board and coupled to a motherboard (10), and a second connector (242) disposed on the converter board and coupled to the liquid crystal display (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the converter board of Boesch with the converter board taught by Hsu for a shorter cable necessary to minimize EMI radiation.

Response to Arguments

7. Applicant's arguments with respect to claims 1 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2835

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yean-Hsi Chang whose telephone number is (571) 272-2038. The examiner can normally be reached on 07:30 - 16:00, Monday through Thursday.

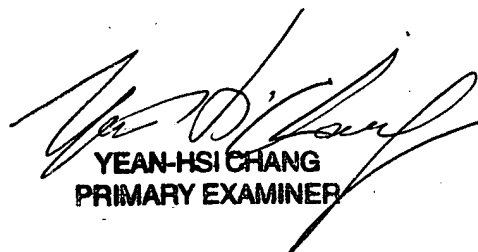
If attempts to reach the examiner by telephone are unsuccessful, the Art Unit phone number is (571) 272-2800, ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained

Art Unit: 2835

from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8558.

Yean-Hsi Chang
Primary Examiner
Art Unit: 2835
May 4, 2006



YEAN-HSI CHANG
PRIMARY EXAMINER